Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1-12 Cancelled

13. (Original) A method of composting biodegradable waste material utilising a plug flow principle including:

inducing low air flow rates through a compost pile using column energy;
utilising high temperature pyro/thermopylic micro-organism activity in the compost pile;
retaining pile energy above stoichiometric levels by controlling the induced air flow;
utilising evolved gas extraction in the compost pile;
maintaining constant biofilm maintenance by combined anaerobic/aerobic operation; and
removing the biomass material at regular intervals.

14. (Original) A method as claimed in claim 13 which includes retaining a naturally induced excess air rate and evolved gas by controlling by a fan with integral condenser/scrubber for condensate removal and odour control assurance.

15. (Previously presented) A method as claimed in claim 13 wherein the biomass material requires no agitation.

16. (Previously presented) A method as claimed in claim 13 including the step of maintaining an active moisture bound biofilm from input to output (typically 45-50% w/w) which prevents the possibility of pyrolysis and encourages microbe activity.

17. (Previously presented) A method as claimed in claim 13 wherein the low air flow reduces the cooling effect of incoming air in the bottom layers giving high efficiency for effective working heights.

18. (Previously presented) A method as claimed in claim 13 and substantially as hereinbefore described.

19. Cancelled

20. (New) A composting system including an insulated, vertical and parallel sided tower incorporating one or more similar chambers for bacterial and fungal breakdown of biodegradable materials at an infeed moisture content of between fifty and seventy percent (w/w) wherein the aeration rate provided by naturally induced upward draft due to the energy retained in the composting biomass by said insulation is stoichiometrically matched to biological oxygen demand plus an excess of between three and seven percent, the base of each chamber being fitted with a mechanical compost removal mechanism through which the air is induced and output regularly removed.

21. (New) A composting system as recited in Claim 20 wherein operation can be continuous with the composting biomass descending in a plug flow manner using controlled shrinkage and wall pressure relief due to biological ablation of material, without internal agitation by mechanical means, during its descent through the vertical chambers combined with periodic removal of output.

22. (New) A composting system as recited in Claim 20 wherein the naturally induced excess air and off gases evolved through biological activity are modulated by a fan with integral condenser/scrubber for odour control assurance and condensate removal from the off gas stream for disposal or reuse within the chambers to maintain minimum average pile moisture levels of between forty five and fifty percent (w/w) thereby securing the maintenance of a biofilm or matrix particulate moisture coating providing habitat for micro-organisms capable of high temperature gas phase conversions as a food source in high temperature zones and supporting fungal activity in lower temperature zones.

23. (New) A composting system as recited in Claim 22 wherein the majority of high temperature gas phase conversions at the interface of the gas/biofilm are of anaerobically produced normally

odorous gases and are carried out by bacteria of pyrophilic and thermophilic genera thus making the composting mass largely self filtering in respect of undesirable odours.

24. (New) A composting system as recited in Claim 22 wherein there is included the step of maintaining a matrix coating moisture bound biofilm from input to output thereby limiting the possibility of pyrolysis or fire while encouraging high temperature micro-organism activity.

25. (New) A composting system as recited in Claim 20 wherein the low air flow rates reduce the cooling effect of incoming air in the bottom layers giving high thermal efficiency at the effective working height.

26. (New) A composting system as recited in Claim 22 wherein the low air flow rates reduce the cooling effect of incoming air in the bottom layers giving high thermal efficiency at the effective working height and thereby promoting fungal attack of remaining organic matter in the lower temperature bottom layers.

27. (New) A composting system comprising:

a continuous-flow vertical composting tower having one or more compartments; and

a base of each compartment fitted with a grate through which output is removed and a plenum through which air is induced wherein a biomass for composting having an initial moisture content of 60-80 % wt./wt. of the total biomass descends through the tower to provide an operating temperature of 45-85 ^{o}C.

28. (New) A continuous-flow vertical composting system comprising:

a vertical composting tower;

a grate at a base of the tower through which output is removed;

a plenum at the base of the tower through which airflow is induced: and

a biomass for composting introduced at a top portion of the tower wherein the biomass has a moisture content of 60-80 % wt./wt. of the total biomass and descends through the tower to provide an operating temperature of 45-85 ^{o}C and the airflow provides an oxygen content equal to BOD plus an excess of 3 % to 7%.

29. (New) A composting system according to claim 20 wherein the biomass comprises green waste and sludge.

30. (New) A continuous-flow vertical composting system according to claim 21 wherein the airflow is naturally induced by retained pile energy.

31. (New). A composting system according to claim 20 wherein the biomass has an active moisture bound biofilm.